

PATENT CLAIMS

1. A connecting element for an assembly system comprising a plurality of supports, such as an assembly system having system supports, wherein the supports have openings arranged in a defined spacing on at least one of the outer walls (68.1, 68.2) of the support, said connecting element (1; 11; 31; 65) comprises a first member (2; 12; 32) and at least one second member (3; 13; 33) with at least one of said first and second members (2; 12; 32; 3; 13; 33) having at least one elongated opening (4, 5; 14, 15, 34, 35, 66) with at least notches over the length of said at least one elongated opening for securing said connecting element (1; 11; 31; 65) to a support or to a base surface by a fastening element (61), passed through the at least one elongated opening (4, 5; 14, 15, 34, 35; 66), engageable with complementary notches (69.1, 69.2) of a fastening element (61).
2. A connecting element, as set forth in claim 1, wherein said second member (3; 13; 33) is arranged essentially perpendicular to said first member (2; 12; 32) and at least one of said first and second members (2, 3; 12, 13; 32, 33) have at least one said elongated opening (4, 5; 14, 15; 34, 35) and at least said notches (6, 7; 20, 21; 37.1, 37.2) over the length of said at least one elongated opening (4, 5; 14, 15; 34, 35).
3. A connecting element, as set forth in claim 1, wherein said second member (33) is a connector (33) formed of a profile section with openings (41.1 to 41.4; 51.2, 51.4; 52.1, 52.3) for fixing the support by fastening elements passable through said openings (41.1 to 41.4; 51.2, 51.4; 52.1, 52.3) in said connector (33).

4. A connecting element as set forth in claim 3, wherein said connector (33) comprises a third member (32), and said third member has at least one elongated opening (34, 35) with notches (37.1, 37.2) located along the length of said at least one elongated opening (34, 35) for engagement with complementary notches of a fastening element.
5. A connecting element, as set forth in claim 3, wherein an outer contour of said connector (33) is formed complementary to an inner contour of said support so that said support can slide over said connector (33).
6. A connecting element, as set forth in claim 3, wherein an inner contour of the connector (33) is shaped complementary to an outer contour of the support so that the support can be inserted into said connector (33).
7. A connecting element, as set forth in claim 3, wherein said connector (33) has a rectangular configuration and the openings (41.1 to 41.4; 51.2, 51.4; 52.1, 52.3) are arranged parallel to a plane for the passage of a fastening element, with said plane formed through said first member (32) of the connecting element.
8. A connecting element, as set forth in claim 7, wherein a plurality of openings (41.1 to 41.4; 51.2, 51.4; 52.1; 52.3) are arranged vertically relative to each other in a plurality of planes parallel to each other.
9. A connecting element, as set forth in claim 1, wherein the notches (6, 7; 20, 21; 37.1, 37.2) are arranged on the side of said first and second members facing away from said support.

10. A connecting element, as set forth in claim 1, wherein said notches (6, 7; 20, 21; 37.1, 37.2; 70.1, 70.2) comprise teeth.
11. A connecting element, as set forth in claim 1, wherein said connecting element (11; 31; 65) has at least one bead (16; 17; 36) extending in the elongated direction of said openings (4, 5, 14, 15, 34, 35).
12. A connecting element, as set forth in claim 11, wherein said teeth are arranged in a least one said bead walls of said at least one bead (16, 17, 36).
13. A connecting element, as set forth in claim 1, wherein a surface zone surrounding at least one said elongated opening has notches (6, 7).
14. A connecting element, as set forth in claim 13, wherein the notches (6, 7) extend parallel to one another transversely of the length of said at least one elongated opening (4, 5; 14, 15; 34, 35; 66).
15. A connecting element, as set forth in claim 1, wherein the outer contour of said at least one member (2, 3) is complementary to the outer contour of at least one of the supports capable of being connected with said connecting element (1; 11; 31).
16. A connecting element, as set forth in claim 1, wherein a fastening element (61) for securing a connecting element (65) to a support comprises an elongated screw having a threaded first end segment (64) and an opposite end rear grip part (63), with complementary notches (69.1, 69.2) comprising teeth.

17. A connecting element, as set forth in claim 16, wherein said fastening element (61) comprises a spring-biased pressure mechanism for tensioning said fastening element (61) with said connecting element (65).
18. A connecting element, as set forth in claim 2, wherein both said first and second members (2, 3) have at least one said elongated opening (4, 5).
19. A connecting element, as set forth in claim 3, wherein said second member is formed of a hollow section.
20. A connecting element, as set forth in claim 4, wherein said third member (32) is arranged in the same plane as said first member.
21. A connecting element, as set forth in claim 10, wherein the pitch of said teeth is 2.5 mm.